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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/438,955	11/12/1999	RICKARD MARKS VON WURTEMBERG	21513	1076

7590

05/22/2003

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EXAMINER

JACKSON, CORNELIUS H

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/438,955

Applicant(s)

VON WURTEMBERG ET AL.

Examiner

Cornelius H. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.



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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Acknowledgment

1. Acknowledgment is made that applicant's Response, filed on 17 April 2003, has been entered.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. "Optically transparent indium-tin-oxide (ITO) ohmic contacts in the fabrication of vertical-cavity surface-emitting lasers" in view of Imai et al. (5706117) and/or Yanagawa (5287367). Martin et al. teach a surface emitting cavity laser comprising a laser stack consisting essentially of a high reflectivity mirror, a low reflectivity mirror; and an active light-amplifying region located between the high and low reflectivity mirrors; a light output port located on one side of the stack adjacent the low reflectivity mirror for transmitting light emitted by the active light-amplifying region and

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constituting an output of the laser; and an ohmic contact on an opposite side of the stack adjacent the high reflectivity mirror, the ohmic contact being photon transparent for transmitting some of the light emitted by the light amplifying region that passes through the high reflectivity mirror, **see paragraphs 1-2 (Introduction and Fabrication)**. Martin et al. fails to disclose for monitoring the light emitted by the light amplifying region that passes through the high reflectivity mirror with an external photodetector. Imai et al. (**see Fig. 2**) and Yanagawa (**see Figs. 3-9**) teach monitoring the light emitted by the light amplifying region that passes through the high reflectivity mirror with an external photodetector is well known and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 21, 23, 26 and 27, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 19, 20, 24, 25, 28 and 29, Martin et al. teach all the stated limitations, **see paragraphs 1-2 (Introduction and Fabrication)**.

Regarding claim 22, "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

4. Claims 18-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (5838708) in view Jiang et al. (5751757). Lin et al. teach a surface emitting

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cavity laser comprising a laser stack consisting essentially of a high reflectivity mirror, a low reflectivity mirror **(202,206)**; and an active light-amplifying region **204** located between the high and low reflectivity mirrors **(202,206)**; a light output port located on one side of the stack adjacent the low reflectivity mirror for transmitting light emitted by the active light-amplifying region and constituting an output of the laser; and a contact **236** on an opposite side of the stack adjacent the high reflectivity mirror, the contact being photon transparent for transmitting some of the light emitted by the light amplifying region that passes through the high reflectivity mirror for monitoring with an external photodetector, **see col. 3, line 64-col. 5, line 59, especially col. 4, lines 43-53**. Lin et al. fail to teach that the contact is ohmic. Jiang et al. teach an ohmic contact for an Schottky contact as a preferred material, **see col. 4, lines 40-49 and col. 5, lines 1-27**. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ohmic contact of Jiang et al. in the laser of Lin et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 21, Lin et al. teach the contact contains an aperture to pass light therethrough, **see Fig. 2**.

Regarding claim 22, , Lin et al. teach the contact has a thickness between 1 and 100nm, **see col. 4, lines 64-65**.

Regarding claims 23 and 26, Lin et al. teach as a matter of design choice that the laser maybe a bottom emitting vertical cavity, **see col. 4, lines 32-53**.

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Regarding claims 19, 24 and 28, both Lin et al. and Jiang teach the contact is made of a photon transparent material, **see Lin et al., col. 5, lines 1-59 and Jiang, col. 4, lines 40-49.**

Regarding claims 20, 25 and 29, Jiang teach the material comprises Indium Tin Oxide, **see col. 4, lines 40-49 and col. 5, lines 1-27.**

Regarding claim 27, Lin et al. teach the substrate **212** is transparent at the wavelength of the light, **see Fig. 2**

Response to Arguments

5. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kish, Jr. et al. (US 5724376 A) teach a surface emitting laser with a monitor **Figs.4 and 6A-B** consisting essentially of a plurality of spaced apart mirrors **53 and 55**, a light amplifying region between the mirrors **51**, a substrate **212**, and a photon transparent ohmic contact (**contact metallization/photodetector**) for passing light

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energy therethrough whereby light emission through said surface emitting laser may be monitored.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (703) 306-5981. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



chj
May 15, 2003



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